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Conference Abstract

DiSSCo e-Services to Serve Global Community Needs

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Abstract

DiSSCo (Distributed System of Scientific Collections) is a research infrastructure (RI) under development, which will provide services for the global research community to support and enhance physical and digital access to the natural history collections in Europe. These services include training, support, documentation and e-services. This talk will focus on the e-services and will give an overview of the current status, roadmap and first results as an introduction to the next talks in the session, which focus on some of the services in more detail and the standards work undertaken in Biodiversity Information Standards (TDWG) to enable them.

The RI community will provide the envisioned e-services, which will use the novel FAIR Digital Object (FDO) infrastructure serving digital specimens from the European collections. The infrastructure will provide integrated data analysis, enhanced interpretation, annotation and access services for community curation and visualisation. The FDO infrastructure enables specimen data to be (re-)connected with genomic, geographical, morphological, taxonomic and environmental information through the digital specimen, making them Digital Extended Specimens.

A large number of user stories have been collected through the DiSSCo-linked projects IC EDIG, SYNTHESYS+ and DiSSCo Prepare, to guide which e-Services to build and what functionality to provide. These user stories are publicly available in a github repository. The e-services are developed based on the user stories and prioritization provided by collection

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providers and the scientific community. A variety of mechanisms are used to collect input: surveys, workshops, roundtables and workpackage meetings, and feedback from users that have already been using beta versions of some of the services. DiSSCo aims to become operational in 2026 but several of the services are already being piloted or implemented. Experimental services and demonstrators are publicly available through DiS SCo Labs for testing and feedback.

By connecting the specimen data with derived and related information in a FAIR way (Findable, Accessible, Interoperable and Reusable), the e-services will accelerate biodiversity discovery and support novel research questions. The FDO infrastructure has a data model that also integrates the PROV Ontology (PROV-O), which allows for the e-services to capture activities and improve the visibility of researcher contributions. This vision towards FAIR and high quality data is essential for community curation of the specimen data and making better use of the limited number of experts available.

To provide the DiSSCo e-services in a FAIR way, the data derived from the natural history collections in Europe needs to be integrated as one virtual collection. The data has to be findable and accessible as soon as it is being created for services like a Specimen Data Refinery prior to publication in a facility like GBIF (Global Biodiversity Information Facility). This requires new standards for describing collections and specimen data. Standards being created to fill these gaps are TDWG CD (Collection Descriptions) and TDWG MIDS (Minimum Information about a Digital Specimen). The DiSSCo e-Services vision brings the data, standards, and processes together to serve the user community.

Keywords

collections, natural history, specimens, FAIR Digital Objects

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